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Fiscal Year 2013-14 Accountability Report

SUBMISSION FORM

I-1 Mission

Vision

To be acknowledged as the foremost provider of practical new discoveries, outreach education and technical assistance in the areas of agribusiness productivity and profitability, economic and community development, environmental conservation, food safety and nutrition, and 4-H youth development to enhance the quality of life for South Carolina's citizens.

Mission Statement

Clemson University Public Service Activities is made up of four interrelated units: Experiment Station, Extension Service, Livestock Poultry Health and Regulatory Services. The overall agency mission is to conduct research, extension (knowledge transfer) and regulatory programs that:

- Advance the competitiveness of South Carolina's \$34 billion agriculture and forestry industry
- Enhance the economic potential of rural communities
- Safeguard the food supply
- Preserve natural resources
- Prepare young people for the workforce through 4-H

Please identify your agency's preferred contacts for this year's accountability report.

	<u>Name</u>	<u>Phone</u>	<u>Email</u>
PRIMARY CONTACT:	Dr. George Askew	864-656-3140	gaskew@clemson.edu
SECONDARY CONTACT:	Michael J Simmons	864-656-2511	msmmns@clemson.edu

I have reviewed and approved the enclosed FY 2013-14 Accountability Report, which is complete and accurate to the extent of my knowledge.

AGENCY DIRECTOR (SIGN/DATE):		
(TYPE/PRINT NAME):	Dr. George R. Askew, Vice President, Clemson University Public Service and Agriculture	

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AGENCY'S DISCUSSION AND ANALYSIS

Acknowledgement, Baldrige, and Administrative Changes

Clemson University's Public Service Activities (PSA) welcomes the opportunity to provide: 1) relevant information regarding its mission, funding, and performance; 2) external and internal factors affecting our performance this year; 3) our current efforts and results; and 4) present and anticipated changes.

PSA is grateful for the departure from the Baldrige criteria; however, it is difficult to present a multifaceted-complex agency in a user-friendly format using Excel. Please see the Appendix for very brief information regarding Clemson University and PSA's accountability systems both external and internal.

The principal changes to be introduced this next reporting period will be driven by the leadership changes that have taken place at Clemson during 2013-14. New president, Dr. James P. Clements is leading the 20th best national public university, as ranked by *U.S. News & World Report*. New provost Dr. Robert H. "Bob" Jones leads the undergraduate and graduate programs. New Vice President for Public Service and Agriculture Dr. George R. Askew, who has been leading PSA's daily operations, is now its official head. New leadership is also present from Dr. Stephen Cole, Regulatory Services director, and Dr. Thomas R. Dobbins, Cooperative Extension Service director.

Background

Public Service Activities (PSA) is at the core of Clemson's land-grant university mission of teaching, research, and public service. Located in all 46 counties and at five Research and Education Centers around the state, PSA develops and delivers research-based information for agriculture, the environment, food safety and nutrition, economic and community development, and youth and families.

Clemson PSA is part of the national (United States Department of Agriculture (USDA) system of research and knowledge transfer. We work collaboratively with stakeholders and other state agencies to identify issues and develop research-based solutions that enhance South Carolina's largest industry—agribusiness—that contributes \$34 billion and 200,000 jobs to the state economy. Clemson PSA is uniquely equipped to transfer science-based information to the state's citizens through the Extension Service, which conducts educational programs in all 46 counties targeted to the local needs.

Clemson Public Service Activities is made up of four interrelated units: Regulatory Services, Livestock-Poultry Health, Experiment Station, and Extension Service (listed in the order they appear in PSA's budget presentation).

Regulatory Services programs protect the state from exotic and invasive species, ensure that pesticides are used safely, regulate the structural pest control industry, verify that fertilizer and lime meet standards and labeled guarantees, conduct programs for seed and organic certification, provide diagnosis of plant pests, and ensure readiness to respond to an agroterrorism threat impacting the state's agriculture involving plant pathogen introductions, fertilizer purchased as an explosive, and pesticide misuse.

Livestock-Poultry Health Programs ensure the health and safety of the livestock/poultry industries and companion animals, protect the meat supply and public health of South Carolinians, and coordinate state agricultural/animal emergency response as lead agency of ESF-17.

Clemson Experiment Station scientists work to improve the quality of life for people in South Carolina, the nation, and the world by providing science-based information on major issues facing decision makers.

Cooperative Extension Service agents meet the diverse needs of South Carolina citizens by delivering research-based information on agriculture, the environment, food safety and nutrition, economic and community development, and youth and families to agribusiness professionals and individuals across the

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state. South Carolina citizens and PSA stakeholders have direct input into decisions of the Extension system through statewide planning efforts and a needs identification process.

Powerful Impacts and Return on Investment

The results presented in the Performance Measures and below represent only part of the actual impacts. Clemson PSA's long-term investments yield tremendous long-term benefits. Clemson Public Service Activities are in every corner of South Carolina, a part of the very fabric of our society after more than 100 years of service.

Accountability and Format of Templates

The Strategic Planning and Performance Measures sections are arranged by the four main units within Clemson PSA: Regulatory Services, Livestock-Poultry Health, Experiment Station (Research), and Extension Service. Each of the unit's goals, strategies, objectives, and performance measures contributes to one or more of the five focus areas in our mission to support agriculture, economic development, environmental conservation, food safety and youth development. The results of our efforts are highlighted in the Strategic Planning and Performance Measures section of this report. However, the impact of Public Service Activities' research, educational, and regulatory programs goes far beyond the immediate recipients and is not easily formatted to an Excel spreadsheet. Below are some PSA accomplishments for FY 2013-14, organized by major unit.

REGULATORY SERVICES www.clemson.edu/public/regulatory/

Efforts to expand collaboration between Clemson Regulatory Services and Clemson Extension began in FY 2014 to leverage the expertise of Regulatory Services and the statewide connections of Extension agents. Regulatory and Extension personnel identified the following programs that could be expanded by collaboration:

- Integrated Pest Management in Schools: Expand the existing program conducted by Regulatory Services' Department of Pesticide Regulation to add Extension agents. The goal is for Extension agents to identify new school systems that want to participate, with the objective of delivering the program to five additional school districts.
- **Junior Invasive Species** Educational Program to teach middle school students how to identify and detect invasive pests. Regulatory Services personnel developed the curriculum and educational materials, and conducted pilot programs with two Extension offices and 30 4-H students. The plan is to increase participation to five counties in FY 2015 with a goal of reaching 500 4-H students.
- USDA Organic Certification Training: Three educational workshops were planned with Extension
 personnel to teach growers the organic certification process and to provide an educational resource for
 those currently certified. In FY 2015, the goal is to conduct these workshops with at least 25 Extension
 employees and to deliver four workshops with local growers interested in Organic Certification.
- Pollinator Stewardship Program: This program addresses the decline in the U.S. honeybee population. Collaboration with Extension agents produced a plan to develop a beehive mapping program so pesticide applicators could avoid treating areas where bees are present. This program is also designed to improve communication between pesticide applicators and beekeepers. In addition to the mapping tool, educational materials on pesticide selection and application will be developed. The goal for FY 2015 is to have 200 beekeepers use the mapping tool to identify their hive locations and to develop two Extension publications addressing pollinator protection and stewardship efforts.

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- Polymerase Chain Reaction (PCR) testing for fecal coliforms helps to assist municipalities in meeting EPA water quality standards. The Regulatory Services PCR lab identified the method needed to run samples for municipalities and began implementing it into a standard for the Molecular Plant Pathogen Detection Lab.
- Plant Problem Clinic Training for Extension personnel was developed to inform new Extension hires of Plant Problem Clinic services and sample submission protocols. Three workshops are planned for FY 2015, with a goal of training 50 Extension agents.

The Department of Pesticide Regulation **collected 138,977 pounds of used pesticide containers for recycling**. Since the program began in 1993, nearly three million pounds of pesticide containers have been recycled, representing an equal number of containers. The program helps protect the environment from pesticide contamination and reduces waste sent to landfills.

The Department of Pesticide Regulation is collaborating with the S.C. Department of Agriculture to **collect and dispose of waste pesticides**. This initiative will prevent the unnecessary dumping and other inappropriate disposal of old, unused, and discontinued pesticides that can damage the environment. In FY 2014, more than 70,000 pounds of waste pesticides were collected at five locations.

In conjunction with the S.C. Pest Control Association and other stakeholders, the Department of Pesticide Regulation **revised the Official South Carolina Wood Infestation Report** to make the report consistent with changes to the S.C. Code of Regulations. This document generally is required by lending institutions to disclose the presence or absence of wood destroying organisms in a structure prior to sale.

The Department of Plant Industry reduced the turnaround time for analyzing **fertilizer samples** from 60 days in FY 2010 to 12 days in FY 2014.

A diagnostician for the Plant Problem Clinic conducted a workshop in Cambodia as part of the **Integrated Pest Management (IPM) Collaborative Research** Support Program. Cambodia has a year-round growing season with plant pests and diseases similar to those affecting South Carolina crops.

A molecular biologist in the Department of Plant Industry's Molecular Plant Pathogen Detection Lab developed, and now is testing, a real-time PCR method for **differentiating European honeybees** from Africanized bees.

Department of Plant Industry scientists developed a **smartphone app** in conjunction with the University of Georgia that allows users to identify and report sightings of invasive species and map their distribution.

The Department of Plant Industry's Molecular Plant Pathogen Detection Lab was designated as the official **Eastern US analytical lab** for the USDA Animal and Plant Health Inspection Service survey of fruit diseases caused by a group of bacteria called phytoplasma.

The Department of Plant Industry initiated a **Fertilizer Tonnage Auditing** program to ensure that proper tonnage reporting is being submitted and to eliminate errors from industry.

LIVESTOCK-POULTRY HEALTH http://www.clemson.edu/lph/

Animal agriculture represents \$6 billion and 37,253 jobs in South Carolina's overall economy, with direct economic impacts of \$1.24 billion and 11,782 jobs. Livestock-Poultry Health (LPH) programs protect and monitor the health of all livestock and poultry in the state and are integral to this industry's continuation and growth.

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Animal Health Programs personnel conducted 779 inspections at livestock auction markets, after-hours markets, dealers, farms, and miscellaneous sales sites such as flea markets. These inspections are part of the requirement for **maintaining the state's "disease free"** status and are coordinated with USDA.

"Disease-free" status improves access to both interstate and international markets. The state veterinarian signed 240 letters this year certifying the state's disease-free status for poultry and enabling export to certain countries. **S.C. poultry industry exports were valued at \$145.8 million in 2009**.

SC Ag-Watch, a program led by LPH, provides training to livestock owners on improved biosecurity practices, foreign animal disease awareness, and notification procedures. This approach emphasizes disease prevention along with the traditional roles of disease surveillance, control, and eradication. State and local emergency managers also use SC Ag-Watch manuals as a reference for agricultural emergencies.

LPH continued work on the **Mid-Atlantic Secure Milk Supply Project** in South Carolina, along with the state veterinarians in TN, NC, VA, MD, WV, DE, NJ and PA. This project, developed in collaboration with all S.C. dairy industry segments, created a regional plan to mitigate potential economic losses of non-infected, voluntarily participating dairy farms in the event of a foot and mouth disease outbreak, without significantly increasing the likelihood that the disease could spread. LPH and Clemson University developed a memorandum of understanding on this issue that was endorsed by the State Veterinarian, Clemson VP for PSA, S.C. Commissioner of Agriculture, and the Governor. It has since been endorsed by all 9 states.

The **Veterinary Diagnostic Center** completed 92,708 tests and procedures during FY13-14 in performing its animal and food safety diagnostic duties. Of these, 91,666 were related to regulatory duties for production animals; the remaining 1,042 were for companion animals and wildlife.

The S.C. Meat and Poultry Inspection department completed its **annual audit by the USDA Food Safety Inspection Service**. This self-assessment review is to ensure a safe meat supply. The S.C. program continues to equal or exceed federal requirements. Department activities included 100% on-line inspection during slaughter operations on 1,820 slaughter days that processed 38,821 head of livestock and more than 3.2 million poultry. Additionally, inspectors performed 51,251 procedures during daily inspection in 76 slaughter and processing facilities.

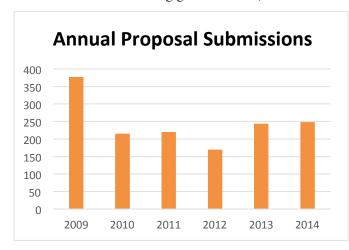
National and international recognition increased as professional staff served on the USDA Secretary's Advisory Committee on Animal Health, American Veterinary Medical Association (AVMA) Animal Agriculture Liaison Committee, National Animal Health Information Technology Board (USDA), Research Advisory Committee for the American Jersey Cattle Club Research Foundation, as Chair of the U.S. Animal Health Association (USAHA) Committee on Transmissible Diseases of Poultry, as Co-Chair of the histopathology subcommittee of the American Association of Laboratory Diagnosticians Pathology Committee, Secretary-Treasurer of the National Association of State Meat and Food Inspection Directors, Second Vice-President of USAHA, AVMA House of Delegates, President-elect of American Association of Small Ruminant Practitioners, Parliamentarian of American Association of Bovine Practitioners, Board of the S.C. Horseman's Council, Vice President of S.C. Sheep Industries, Board and Executive Committee of USAHA, Executive Board of the S.C. Association of Veterinarians (SCAV) and Chair of the Large Animal Academy for SCAV.

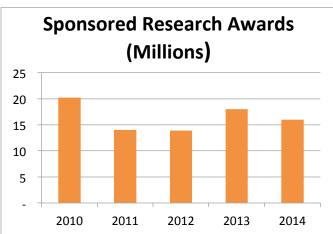
Animal Diseases for which S.C. has maintained 100% Disease-Free Status

Classical Swine Fever, since 1972	Bovine Brucellosis, since 1984
Pullorum-typhoid, since 1980	Swine Pseudorabies, since 1995
Bovine Tuberculosis, since 1981	Swine Brucellosis, since 1998

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As a leading land-grant public research institution, Clemson University highlights its federal **grant activities**. The number of externally funded research grants is one measure of Experiment Station scientists' success in competing for limited funding. The data is cyclical in nature because of long-term funding periods—usually two to five years—limited numbers of principal investigators, and time constraints. This data is used to evaluate researchers' productivity as well as to determine PSA's contribution to university goals for generating external funding for research. Below are graphs showing the number of grant proposals that Experiment Station scientists submitted and the resulting grant awards (in millions of dollars).





Patents and technical contributions demonstrate that Clemson PSA scientists contribute to the body of knowledge in their areas of expertise. Patents indicate the merit and originality of discoveries submitted. Patents also have the potential to generate new economic activity through licensing and marketing. Disclosures are the first step in the discovery process leading to a patent. Data over time indicate that Experiment Station researchers are successful in discovering new products and processes, as shown below.

In FY2013-14 Experiment Station researchers produced:

- 19 technical contributions
- 9 patent actions
- 14 disclosures
- 2 technology licenses

Researchers also developed 21 new crop varieties, including:

- 9 new bioenergy sorghum varieties
- 4 new soybean varieties
- 8 cotton germplasm varieties

COOPERATIVE EXTENSION www.clemson.edu/extension/

Extension personnel delivered **educational programs** and information through 223,492 contacts across all 46 South Carolina counties. More than 137,662 participants attended 7,032 Extension programs.

To **reduce food-borne illness**, agents conducted ServSafe® food safety training for managers, supervisors, and other food handlers. A total of 80 food-service employees earned a course completion certificate, representing 46 food establishments. These food handlers can potentially affect 86,668 people. The National Restaurant

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Association estimates that, on average, a food-borne illness outbreak costs an establishment about \$75,000. The approximate economic value of the trainings could be as high as \$3,450,000 by preventing outbreaks.

Extension agents developed and delivered 389 educational programs in the areas of **Sustainable Forest Management and Natural Resources**, reaching 4,404 people.

Extension agents partnered with the state Prescribed Fire Council, Forestry Commission, and Department of Natural Resources to teach landowners the aspects of **prescribed burning** and its benefits to the ecosystem.

Agents worked with farmers and landowners to conduct a **deer population** survey and improve marketing strategies for leasing property for recreation and hunting. As a result, participants increased their lease income by approximately \$37,500.

Agents conducted 3,372 **4-H programs** that reached 73,554 youth and families with programs on agriculture, natural resources, food safety and nutrition, and leadership skills.

Extension programs on productivity and profitability benefitted growers farming more than **950,000** acres of agronomic crops, which included 90,000 acres of peanuts, 350,000 acres of soybean, 250,000 acres of cotton, 215,000 acres of corn, and 22,000 acres of sorghum.

Extension agents conducted peanut maturity clinics and farm visits to increase grower profits. During a two and half month period, they visited 20 farms representing approximately 4,500 acres of peanuts. This assistance in determining maturity and digging date **saved producers 250 pounds of peanuts per acre**. With the contract price of peanuts being \$545 per ton for Virginia Type and \$475 for Runner Type in 2013, these savings equaled \$68.13 and \$59.38 per acre, respectively.

Participants in the **Palmetto Leadership**, **Senior Leadership**, and **Junior Leadership** programs reported that they strengthened their community awareness and ability to access community resources, built partnerships, and strengthened their capacity to respond to future issues and opportunities. The most recent research indicates that 70% of graduates were still involved in a responsible community project three years after graduation.

In the fall of 2013, farms sold 1,048 **feeder calves** (15 truckload-sized lots) directly off the farm, which increased the value of the calves by \$96 per head compared to traditional, weekly cattle auction prices.

Extension **horticulture programs** improved management of approximately 103,000 acres through ornamental plant schools, home vegetable production programs, pesticide applicators recertification classes, orchard management programs, turf schools, ornamental short courses, Carolina Yards online short courses, and an environmental conservation lecture series.

Expanded Food and Nutrition Education Programs were conducted for 542 limited resource adults to improve nutrition practices, food safety, and food resource management such as planning meals, comparing prices, and using grocery lists. Approximately 2,828 volunteer hours were contributed for adult and youth EFNEP programs.

Agents conducted 323 nutrition, physical activity, and health programs for the public, reaching 4,973 adults.

Home and Garden Information Center (HGIC) experts provided gardening information to 14,970 individuals by telephone or in person. In addition, the HGIC website recorded 3,811,027 visits last year.

Some 333 **Master Gardeners** contributed 61,106 hours of service through programs, oral presentations, newsletters, radio programs, and TV appearances. This represents a value of \$1,231,286 in program support.

Extension agents and specialists **published 625 articles** in newspapers, trade publications, and newsletters; and also delivered information on television, radio, Facebook, and websites, reaching a potential 4,729,144 people in South Carolina and neighboring states.

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	•								.45	SOUTH CARO	Program Template
Program/Title	Purpose	General	FY 2012-13 Exp Other	<u>enditures</u> Federal	TOTAL	General	FY 2013-14 Expe	<u>enditures</u> Federal		TOTAL	Associated Objective(s)
I.A. Regulatory Services - General	Regulatory Services protects the state from exotic and invasive species, ensures that pesticides are used safely, regulates the structural pest control industry, verifies that fertilizer and lime meet standards and labeled guarantees, conducts programs for seed and organic certification, provides diagnosis of plant pests, and ensures readiness to respond to a catastrophic event impacting the state's agriculture.	\$ 696,929 \$	4,079,249		\$ 4,776,178	\$ 702,986 \$	4,279,968		\$	4,982,954	All Goal 1 Objectives
I.B. Regulatory Services - Restricted	agriculture. Regulatory Services protects the state from exotic and invasive species, ensures that pesticides are used safely, regulates the structural pest control industry, verifies that fertilizer and lime meet standards and labeled guarantees, conducts programs for seed and organic certification, provides diagnosis of plant pests, and ensures readiness to respond to a catastrophic event impacting the state's agriculture.		\$	933,484	\$ 933,484		\$	1,028,154	\$	1,028,154	All Goal 1 Objectives
II.A. Livestock-Poultry Health - General	The role of Clemson Livestock-Poultry Health (LPH) is to protect animal health through control of endemic, foreign, and emerging diseases in livestock and poultry and to protect the health of S.C. consumers by providing a comprehensive inspection service to ensure that meat and poultry products are safe, wholesome and accurately labeled.	\$ 2,654,045 \$	670,965		\$ 3,325,010	\$ 2,979,721 \$	303,017		\$	3,282,738	All Goal 2 Objectives
II.B. Livestock-Poultry Health - Restricted	The role of Clemson Livestock-Poultry Health (LPH) is to protect animal health through control of endemic, foreign, and emerging diseases in livestock and poultry and to protect the health of S.C. consumers by providing a comprehensive inspection service to ensure that meat and poultry products are safe, wholesome and accurately labeled.		\$	2,129,598	\$ 2,129,598		\$	2,151,807	\$	2,151,807	All Goal 2 Objectives
III. Agricultural Research	The role of Clemson's Experiment Station is to conduct research to develop relevant, science-based information that improves the state's economy by enhancing agriculture and forestry production, and natural resources management	\$ 12,559,898 \$	3,679,649 \$	4,273,881	\$ 20,513,428	\$ 13,778,626 \$	4,485,897 \$	3,896,191	\$	22,160,714	All Goal 3 Objectives
IV. Cooperative Extension	The role of Clemson Extension is to transfer science-based information from the Experiment Station, Livestock-Poultry Health and Regulatory Services to commercial growers, livestock producers, land managers and individuals so that clientele can use the information to improve their well-being.	\$ 13,301,762 \$	12,589,612 \$	6,674,113	\$ 32,565,487	\$ 13,820,853 \$	12,574,029 \$	6,670,244	\$	33,065,126	All Goal 4 Objectives

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Strategic Planning Template

				Strategic Planning Template
Туре	Goal	<u>Item #</u> Start	Object	Description
G	1			Regulatory Services protects the citizens of South Carolina and the environment by implementing legislatively mandated regulatory programs and by providing other essential programs and services for agriculture and related sectors and for homeowners.
S		1.1		Ensure the safe use of pesticides to protect South Carolina's public health, natural resources and environment.
			1.1.1	Regulate the structural and turf/ornamental pest control industries ensuring compliance with pesticide laws and regulations.
			1.1.2	Monitor the use of pesticides in South Carolina to ensure their safe and effective use and prevent harm to humans, plants, animals and the environment.
S		1.2		Protect South Carolina's structures from termites and other structural pests by ensuring high standards are met for the pest control industry.
			1.2.1	Regulate the structural and turf/ornamental pest control industries ensuring compliance with pesticide laws and regulations.
			1.2.2	Monitor the use of pesticides in South Carolina to ensure their safe and effective use and prevent harm to humans, plants, animals and the environment.
S		1.3		Ensure that the fertilizer, lime, landplaster and soil amendments sold in South Carolina will be of high quality and properly labeled.
			1.3.1	Fertilizer, lime, and soil amendments distributed to end users in South Carolina must meet label guarantees and be free of contaminants.
S		1.4		Protect South Carolina' agriculture and the environment from harmful or invasive plant disease, weed, and insect species.
			1.4.1	Protect South Carolina's ecosystem and all levels of agricultural production by mitigating impact from plant pests, i.e., plant diseases,
S		1.5		Establish standards will be met for the production of certified seed.
			1.5.1	Seed is certified as true to variety and meets all official certification standards for quality and purity.
S		1.6		Correctly identify or diagnose plant pests and diseases and provide effective control recommendations in a timely manner.
			1.6.1	Analyze plant samples to identify or diagnose weed, disease, and insect problems, providing results and control recommendations to clients.
S		1.7		Help prepare South Carolina to better recover from disasters and other emergencies impacting agriculture in the state.
S		1.8		Enforce that established standards will be met for the production of certified organic products.
			1.8.1	Provide USDA -NOP accredited certification services to organic producers, processers, and handlers who seek certification through our agency.
S		1.9		Provide for effective leadership, management and administration of Regulatory Services, personnel and facilities.
			1.9.1	Annually develop and initiate specific objectives for the various program areas within Pesticide Regulation and Plant Industry to include assignment of responsibility and target dates for completion.
G	2			Clemson Livestock Poultry Health will ensure the continued health of the livestock and poultry industry, ensure safe, wholesome, properly labeled meat and poultry products, and protect the public health of the citizens of South Carolina.
S		2.1		Monitor interstate movement of animals, perform inspections at livestock auction markets, and develop and expand livestock traceability capability for livestock disease prevention, control and eradication.

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				Strategic Planning Template
Туре	Goal	<i>Item #</i> Start	Object	Description
			2.1.1	Protect animal and public health through control of endemic, foreign, and emerging diseases; Enforce state and federal animal health laws and regulations by monitoring interstate movement of animals and inspecting livestock auction markets; Expand livestock traceability, designed to enhance animal disease control, surveillance, and eradication programs.
S		2.2		Protect the health of consumers by providing a comprehensive inspection service to ensure safe, properly labeled, wholesome meant and poultry products
			2.2.1	Regulate approximately 90 meat & poultry plants; Protect the health of consumers by providing a comprehensive inspection service to ensure that meat and poultry products are safe, wholesome and accurately labeled.
S		2.3		Provide accurate and timely veterinary diagnostic and surveillance testing for early detection of disease.
			2.3.1	Provide accurate and timely veterinary diagnostic and surveillance testing for early detection of disease, thus improving the response activities and mitigating economic losses in livestock and poultry industry sectors; To meet NVSL accreditation standards and criteria for technicians to be proficiency certified.
G	3			The Clemson Experiment Station aims to identify critical issues and find solutions through research that support South Carolina's agriculture and forest industries.
S		3.1		Provide research based information for use by livestock producers, dairy and poultry farmers and horse owners in South Carolina
0			3.1.1	Research will be conducted to improve animal production systems in South Carolina. Outcomes are to include disclosures, patent actions, and technical contributions
S		3.2		Support and assist the commercial horticulture industry, farmers and homeowners in South Carolina
О			3.2.1	Research will be conducted to improve horticultural crop production in South Carolina. Outcomes are to include disclosures, patent actions, and technical contributions
s		3.3		Generate new science to boost agricultural production, improve global capacity to meet the growing food demand, and foster innovation in fighting hunger by addressing food security for vulnerable populations
0			3.3.1	Research will be conducted to address issues related to global food security and hunger. Outcomes are to include disclosures, patent actions, new varieties, and technical contributions
S		3.4		Develop new and innovative programs and strategies to encourage economic growth and development, in South Carolina's rural counties
0			3.4.1	Research will be conducted to develop new strategies for rural economic growth in South Carolina. Outcomes are to include disclosures, patent actions, and technical contributions
S		3.5		Improve the quality, nutritional value and safety of the food consumed by South Carolina's citizens
0			3.5.1	Research will be conducted in food safety, nutrition, and human health in South Carolina. Outcomes are to include disclosures, patent actions, and technical contributions

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				Strategic Planning Template
Туре	Goal	<i>Item #</i> Start	Object	Description
S		3.6		Help to insure that South Carolina's citizens and industry have an ample supply of water and habitat for fish, wildlife and recreational purposes now and in the future
0			3.6.1	Research will be conducted to improve natural resources in South Carolina. Outcomes are to include disclosures, patent actions, and technical contributions
S		3.7		Generate knowledge to develop agricultural systems that maintain high productivity in the face of climate change
0			3.7.1	Research will be conducted into climate change. Outcomes are to include disclosures, patent actions, and technical contributions
S		3.8		Improve the quality of South Carolina's forests though watershed management, timber production strategies, and forest management practices
0			3.8.1	Research will be conducted to optimize the state's forest resources in South Carolina. Outcomes are to include disclosures, patent actions, and technical contributions
S		3.9		Identify and develop biomass which can be used for biofuels, design optimum crops and forest products to maximize bioenergy production, and produce value-added bio-based industrial products
0			3.9.1	Research will be conducted into sustainable energy. Outcomes are to include disclosures, patent actions, and technical contributions
G	4			The Cooperative Extension Service will provide sound, scientifically based information to South Carolinians and help them use that information to improve the quality of their lives
S		4.1		Improve the production efficiency, environmental sensitivity, and profitability of animal production systems and reduce the environmental impact of animal waste in South Carolina through the Livestock and Forages Program
0			4.1.1	Growers will improve the production efficiency of confined animal systems and marketing of grazing livestock and will adopt grazing managing practices.
S		4.2		Improve profitability, increase efficiency, and reduce negative environmental impacts of horticultural cropping systems in South Carolina through the Sustainable Horticultural Production Program
0			4.2.1.	Increase the supply and dissemination of information and knowledge about Integrated Pest Management strategies and systems and increase the level of adoption of environmentally sound integrated pest management practices.
S		4.3		Develop and implement agricultural production systems in South Carolina that are economically sustainable, safe and environmentally sound through the Sustainable Agronomic Production Program
О			4.3.1	Growers will adopt new agronomic production practices
S		4.4		Promote healthy lifestyles and improve the quality and safety of food for the citizens of South Carolina through the Food Safety, Nutrition and Health Program

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Strategic Planning Template

				Strategic Planning Template
Туре	Goal	<u>Item #</u> Start	Object	Description
0			4.4.1.	Managers and supervisors will be certified to train food handlers in safe food handling techniques and food handlers will increase knowledge and skills in safe food handling and will practice safe food handling techniques.
S		4.5		Promote engagement, community enhancement, and improvement that are linked to community image, sustainable economic development, and improved quality of life for the citizens of South Carolina
0			4.5.1.	Citizens will gain new knowledge in economic and community development and practice leadership skills gained
S		4.6		Empower youth to become healthy, productive, and contributing members of society and promote their educational success through a learn-by-doing approach, inclusive learning environments, and the involvement of caring adults
0			4.6.1.	Youth will gain knowledge and skills in leadership, citizenship, competency, coping, and caring skills through 4-H Youth Development Program
S		4.7		Promote the use of best management practices of forest systems and other natural resources to improve South Carolina's forest productivity and promote natural resource conservation through the Sustainable Forestry and Natural Resources Program
0			4.7.1.	Landowners will adopt best management practices for forestry and natural resources
S		4.8		Help foster Clemson University's academic reputation through relevant public service, highly regarded faculty and staff and well trained volunteers
0			4.8.1.	Faculty, staff, and volunteers will be equipped for leadership roles, will train youth with new knowledge and skills, and will make positive impacts in their communities.
S		4.9		Promote the use of best management practices of water resources to improve South Carolina's water quality and quantity through the Water Resources Education Program
0			4.9.1.	Participants will increase knowledge in water resources

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						OF SOUTH CHICA	Perform	ance Measurement Template
Performance Measure	Last Value	Current Value	Target Value	Time Applicable	Data Source and Availability	Reporting Freq.	Calculation Method	Associated Objective(s)
Number and acceptance rate of phytosanitary certificates issued		100%	95%	July 1-June 30	Benchmarking	Annual	DPI issued 1,188 federal phytosanitary certificates in a timely manner last year with no rejections from any country. 100% acceptance rate.	1.4.1
Total number of inspections of regulated businesses and the resultant compliance rate of these inspections.		100%	95%	July 1-June 30	Activity volume	Annual	594 of 654 nurseries were inspected 90%). 96 of 1148 nursery dealers were inspected (8%). All were in compliance or brought into compliance after inspection. The nurseries that were not inspected were hobbyists rather than commercial nurseries.	1.4.1
Conduct at least four targeted surveys to detect potential invasive species introductions and regularly survey and treat currently infested sites with the goal of eradication.		7	4	July 1-June 30	Activity volume	Annual	Seven (7) targeted surveys were conducted during the reporting period as follows: honeybee national survey, no pests or diseases of concern. Phytophthora ramorum nursery - not detected. Stone fruit orchard pests - none detected. Nursery pests - none detected. Emerald Ash Borer - none detected. Cogangrass - no new sites. Thousand Canker Disease/Walnut Twig Beetle - not detected.	1.4.1
Record and report the rate of deficient fertilizer samples		9.37%	Less than 20%	July 1-June 30	Benchmarking	Annual	Of 2,027 fertilizer samples collected, 190 were found to be deficient for an overall deficiency rate of 9.37%, well below the target of 20%.	1.3.1
Percentage of seed lots inspected in the field that meet purity standards in laboratory tests		99.5%	95%	July 1-June 30		Annual	99.5% compliance rate of the samples of certified seed lots (456) were found with the SC Seed Certification Standards for purity.	1.5.1
Conduct on-site inspections and records audits of all producers and handlers desiring to obtain organic certification	program evaluation	Annual independent program evaluation reveals no major noncompliances.	program evaluation	July 1-June 30		Annual	USDA-ARS completed an onsite audit of the Clemson University Organic Certification Program. Clemson was cleared of previous non-compliance s and approved for continued accreditation.	1.5.1, 1.8.1

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						ON SOUTH CHILD	Perform	ance Measurement Template
Performance Measure	Last Value	Current Value	Target Value	Time Applicable	Data Source and Availability	Reporting Freq.	Calculation Method	Associated Objective(s)
Provide accurate and timely diagnosis of all samples and viable control recommendations based on this diagnostic information.		Met - The Plant Problem Clinic processed 3,952 samples.	Samples diagnosed and identification and control recommendations provided w/n one week.	July 1-June 30	Activity volume	Annual	The Plant Problem Clinic processed 3,952 samples. This was broken down as follows: 873 disease or abiotic problems, 277 insects or mites, 97 weeds, 8 mushrooms. The Molecular Plant Pathogen Detection Laboratory processed 280 samples. The Commercial Turf Clinic processed 58 samples. 2,697 nematode samples.	1.6.1
Compliance rate Category 7 licensed pesticide applicators (Structural)		84%	60%	July 1-June 30	Benchmarking	Annual	Compliance Rate	1.1.1, 1.2.1
Total number of Category 3 licensed pesticide applicators		4793	2800	July 1-June 30	Activity	Annual	Total number of applicators, both commercial and noncommercial, recorded and compared to benchmark of 2,800	1.1.1, 1.2.1
Number of compliance, complaint and other inspections conducted annually will be recorded and compared against an established benchmark of 2000 inspections		2224	2000	July 1-June 30	Activity volume	Annual	Total number of inspections	1.1.2, 1.2.2
Implement sustainable IPM programs in selected SC school districts		Schools in 3 school districts	Schools in 3 school districts	July 1-June 30	Benchmarking	Annual	Total number of schools participating	1.1.2, 1.2.2
Develop and maintain emergency preparation and response plans for agroterrorism or other emergency situations that may affect SC agriculture	Training completed	Training completed	Training completed	July 1-June 30	Government standards	Annual	Ensure proper training and equipping of staff; conduct or participate in exercises of equipment and procedures; conduct surveys to detect potential threats; educate the public regarding potential hazards/risks.	
Measure the number of repeat violators (structural compliance)		13%	Less than 20%	July 1-June 30	Benchmarking	Annual	The percentage of structural pesticide applicators who, after receiving one enforcement action for a violation, receive one or more additional enforcement actions within the next 12 months.	1.1.1, 1.2.1
Provide a means for electronic submission of fertilizer, lime, landplaster and soil amendment tonnage reporting and payment. Likewise for seed and organic certification applications.	NA	System online - implemented	System online - implemented	July 1-June 30	Implementation complete.	Annual	Administrative measure	1.3.1, 1.5.1

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				_		ON SOUTH CAROL	Perform	ance Measurement Template
Performance Measure	Last Value	Current Value	Target Value	Time Applicable	Data Source and Availability	Reporting Freq.	Calculation Method	Associated Objective(s)
Implement the new Soil Fumigation (Category 1D) licensing category requirements, to include development of an appropriate manual, examination and compliance assistance education program.	NA	Successfully implemented	Successfully implemented	July 1-June 30	Implementation complete.	Annual	Administrative measure	1.1.2, 1.2.2
Measured progress toward meeting target completion dates for the specific program objectives identified for each department.	Variable	Variable	Variable	July 1-June 30		Ongoing	Administrative measure	1.9.1
Number of new premises registered by Livestock Poultry Health.		168	100	July 1-June 30	LPH reports	Annual	Total	2.1.1
Total number of premises registered by Livestock Poultry Health.		5711	5643	July 1-June 30	LPH reports	Annual	Total	2.1.1
Meet disease testing and trace back requirements for continued "disease free" status as specified in the code of federal regulations.	Requirements Met	Requirements Met	Requirements Met	July 1-June 30	LPH Reports	Annual		2.1.1, 2.2.1
Conduct inspections and investigations at locations including livestock markets, exhibitions, sales, and on livestock farms. throughout South Carolina.		779 inspections, farm visits, and investigations.	450 inspections, farm visits, and investigations	July 1-June 30	LPH inspection reports	Annual		2.1.1, 2.2.1
Inspection of meat & poultry plants and HACCP and SSOP records by inspector in charge. Indepth reviews of meat & poultry plants and HACCP and SSOP records by inspectors and supervisors.		100% Performed	100% daily inspection of all meat & poultry plants and records, when operating		LPH inspection reports	Annual		2.1.1, 2.2.1
Meet NVSL (National Veterinary Services Laboratories) accreditation standards and criteria for technicians to be proficiency certified.	Accreditation maintained	100% final pass rate achieved for all lab technicians on required proficiency testing for FY13-14	100% final pass rate of NVSL proficiency tests for procedures performed in Clemson Veterinary Diagnostic Center for which NVSL monitors test performance.		NVSL test results	Annual	100% final pass rate of NVSL proficiency tests for procedures performed in Clemson Veterinary Diagnostic Center for which NVSL monitors test performance.	2.3.1
Maintain AAVLD (American Association of Veterinary Laboratory Diagnosticians) Accreditation.	Accreditation maintained	Accreditation maintained	Accreditation maintained	July 1-June 30	AAVLD accreditation	Annual		2.3.1

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				_		ON SOUTH CHEON	Perform	ance Measurement Template
Performance Measure	Last Value	Current Value	Target Value	Time Applicable	Data Source and Availability	Reporting Freq.	Calculation Method	Associated Objective(s)
Perform diagnostic procedures which are required for marketing of livestock and poultry, maintenance of "disease free status", ensuring a safe meat supply, and assisting veterinarians and producers in diagnosing and treating diseases in animals.		100% Performed 92,708 diagnostic procedures. 98.9% of those procedures were regulatory/productio n animal related.	Perform 80,000 diagnostic procedures. Over 90% of those procedures will relate to production animals	July 1-June 30	LPH reports	Annual		2.1.1, 2.2.1, 2.3.1
Identify disclosures of new products and processes associated with the project results generated by its faculty.		14	The number of disclosures is not easily predicted.	July 1-June 30	Experiment Station Existing Data	Annual	The data is compared to the projected number of disclosures.	All associated 3 goals
Number of patent applications and awards associated (Patent Actions)		9	Number of patent applications and awards is difficult to predict.	July 1-June 30	Experiment Station Existing Data	Annual	The data is compared to the projected number of patent applications and patents awarded. The data demonstrates the discovery of new knowledge and its exclusivity to South Carolina, and it is an indication of the merit of the discoveries submitted.	All associated 3 goals
Number of license agreements signed for technology reflected in patents.		2	Number of license agreements signed is difficult to predict.	July 1-June 30	Experiment Station Existing Data	Annual	The data is compared to the number of licenses which are projected to be signed. The data demonstrates the application of new knowledge and it is an indication of the merit of the new technology.	All associated 3 goals
Number of technical contributions related to research.		119	Number of technical publications accepted for peer- reviewed publications is not a predictable variable.	July 1-June 30	Experiment Station Existing Data	Annual	The number of technical contributions are aggregated, and the results are evaluated using projected targets based upon historical data.	All associated 3 goals
Number of new plant varieties developed		21	Number of plant varieties developed is difficult to predict.	July 1-June 30	Experiment Station Data	Annual	Activity volume	All associated 3 goals
Participants will report using one or more practices learned in livestock and forages educational sessions	100%	96%	80%	July 1-June 30	Livestock and forages evaluations/CAMM exams CUMIS	Annual	Number of participants using practices divided by the number who gained knowledge	4.1.1.
Persons completing sustainable horticultural programs will report a gain in knowledge and skills	95%	87%	80%	July 1-June 30	Consumer horticulture evaluations/CUMIS	Annual	Number of participants gaining knowledge divided by the number who attended the program	4.2.1.

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				SOUTH CARO	Performance Measurement Template			
Performance Measure	Last Value	Current Value	Target Value	Time Applicable	Data Source and Availability	Reporting Freq.	Calculation Method	Associated Objective(s)
Persons completing sustainable agronomic production programs will report a gain in knowledge and will apply skills learned	90%	86%	80%	July 1-June 30	Agronomic crop evaluations and numbers of acres affected	Annual	Number of people reporting acres affected	4.3.1.
Participants in the pesticide applicator training program will increase knowledge and receive certification as a result of participating in educational programs	98%	94%	80%	July 1-June 30	Pesticide application evaluations	Annual	Number of participants gaining knowledge divided by the number who attended the program	4.3.1.
Participants attending food safety training will be certified in safe food handling	80%	92%	80%	July 1-June 30	Food safety training exams	Annual	Number passing tests. Potential cost of outbreaks per establishment	4.4.1.
Graduates from the EFNEP Program will show improvement in one or more nutrition practices	80%	75%	75%	July 1-June 30	Dietary recall records; pre/post tests	Annual	Number showing improvement divided by the number participating	4.4.1.
Participants who complete Community, Leadership and Economic Development (CLED) programs will report knowledge gained	80%	100%	80%	July 1-June 30	Community and economic development program evaluations/CUMIS	Annual	Number of participants gaining knowledge divided by the number who attended the program	
Graduates from the Leadership Programs will collaborate to implement community projects	70%	70%	50%	July 1-June 30	External reports from collaborators	Annual	Number of people collaborating divided by the number participating	4.5.1.
Youth ages 9-19 participating in 4-H will demonstrate skills learned as a result of participating in 4-H projects	85%	88%	80%	July 1-June 30	4-H leadership development evaluations	Annual	Number of participants gaining knowledge divided by the number who attended the program	4.6.1.
Volunteer hours contributed to 4-H projects	27,048	31,129	25,000	July 1-June 30	4-H leadership development evaluations/ES-237	Annual	Number participating and hours contributed	4.6.1.
Volunteers will be equipped for leadership roles, will train youth with new knowledge and skills, and will make positive impacts in their communities	4,508	4,718	4,000	July 1-June 30	Volunteer reports	Annual	Number of volunteers receiving training	4.6.1.
Foresters and landowners will report a gain in knowledge as a result of participating in sustainable forest and natural resource programs	98%	95%	80%	July 1-June 30	Sustainable management forestry evaluations and numbers of acres affected	Annual	Number of participants gaining knowledge divided by the number who attended the program	4.7.1.
Extension staff will conduct relevant public service, publish scholarship for peer review, and convey through two impact statements per program to on-campus and off-campus communities their achievements	81%	63%	50%	July 1-June 30	Impact Statement database	Annual	Number of media reports	4.8.1.
Persons completing water resources programs will report a gain in knowledge and skills	97%	97%	80%	July 1-June 30	Water resources program evaluations	Annual	Number of participants gaining knowledge divided by the number who attended the program	4.9.1.

Appendix

Clemson University Public Service Activities (PSA) internal accountability system PSA utilizes the web-based assessment management system as do all other University administrative and academic units. The online system captures standard program-level assessment areas: mission, outcome/objectives, measures/findings, action plan, and analysis. It has expanded capabilities in linking to larger institutional perspectives within each program's outcomes/objectives. This system allows every department and unit at Clemson the opportunity to link to: general education competencies, professional accreditation standards, institutional priorities (goals), and institutional and college strategic plans.

Unit information is submitted to the Clemson University Office for Institutional Assessment. Each unit must complete an initial plan and a self-assessment of their efforts each year. At the end of a reporting period, each unit must report why they did or did not meet those objectives and explain what improvements they will make based on the results of that knowledge.

Information becomes a part of the strategic planning stage for PSA through assessment completion and review by unit heads and other administrators. PSA also uses the Clemson University Management Information System (CUMIS). This online system was developed for assessment reporting to the U.S. Department of Agriculture. It collects and tracks data for the Clemson University Cooperative Extension Service, including number of programs conducted, number of participants completing programs, knowledge gain, and adoption of practice as a result of participation.

See this link for University Assessment http://www.clemson.edu/assessment/weave/

University Performance: Clemson University is assessed by multiple constituencies. The University is subject to accreditation reviews for both individual disciplines and the University as a whole. In addition, students, alumni and other external partners register their response to institutional performance through alumni surveys, student focus groups, and donations.

ZOOM IN/OUT AND SCROLL TO VIEW FULL DOCUMENT		*ASSES	SMENT RUBRIC:	evaluation	ZOOM IN/OUT AND SCROLL TO VIEW FULL DOCUMENT				
		ACCECCATE	<u>NOTE</u> : This T PLANNING	instrument is intended for	r internal Clemson Universit	<u> </u>	CTION ON ASSESSMENT INSIGHT		
STATUS / RATING	MISSION	GOALS	OBJECTIVES / OUTCOMES	MEASURES / ACHIEVEMENT TARGETS	FINDINGS	ANALYSIS	REPORTING	ACTION PLANNING	ANNUAL REPORT
BENCHMARK: Each academic program an administrative unit is required to submit an annua assessment report which should contain the elements noted in columns in this rubric. Assessment typically targets student learning, teaching and/or program improvement. Assessment Dashboard Assessment plan Elements of an assessment plan Assessment plan Assessment plan Assessment plan Cycle Online resources	university / college / department mission(s), and aligned with relevant professional organizations (as	At least one Goal should be linked to each theme in Mission. More than one goal is recommended. Goals forge connections between the Institutional Mission Statement, the program/unit mission statement, and educational/process outcomes. Goals convey a clear picture of meaningful expectations; establish the focus of the program/unit, and provide direction to mission implementation.		should be mapped to at least one objective / outcome. Assessment should include multiple measures and data gathering techniques. Measures can be direct, indirect, and / or administrative. Measures that target a cognitive domain may utilize Bloom's Taxonomy.	At least one actionable Finding should be reported each year to demonstrate that assessment has been conducted and results in program / student learning change. One finding per Target is preferred.	questions must adequately demonstrate that	Assessment results and syntheses of analyses should be shared with appropriate stakeholders at least annually.	new improvements are being planned and / or implemented that will benefit the Mission, Goal(s), and / or Outcomes / Objectives. If all targets have been met, ar action plan is still required that will focus on improving a new program and/or student learning theme such as infusing technology in the teaching/learning environment or programming. Another example might include the addition of a	assessment loop and address "So what?" questions. Context and elaboration should be provided regarding your assessment results which make a case for the merit and value of your programs and activities, and provide rationale for future directions in serving institutional priorities. Note: This section includes multiple elements which all must be completed. An
NONCOMPLIANT	No mission statement is provided.	No Goal is provided.	No Objective/Outcome is provided. For education programs, at least one student learning objective (SLO) is required.	No Measure/Achievement Target is provided.	No finding is provided unless assessment is intentionally not conducted annually.	Analysis section is incomplete or not provided.	No mention of assessment reporting outside annual institutional assessment reporting (WEAVEonline).	No Action Plan is provided. Note: Even if all targets are met, a new action plan must be provided.	Section is not fully populated or no information has been provided.
DEVELOPING	General statement of program intent; does not identify stakeholders; does not demonstrate clear alignment with university / college/ department missions; too general to distinguish the program or too specific to encompass the entire mission.	statement of mission; too many or too few goals; too vague (restatement of mission elements) or too specific (expression of outcomes/objectives); goals lack clear association to	determine whether the outcome/objective has been met; does not address breadth of knowledge, skills or services	tools/instruments not developed and/or vaguely described; little or no use of direct measures, particularly involving student learning outcomes; course grades used	At least one finding reported with adequate detail.	Analysis questions are poorly answered and do not clearly/adequately answer how assessment findings are used to make improvements to programs and/or student learning.	Some assessment results are made available but not readily pushed to all stakeholders.	An action plan is provided for each target that is 'partially met' or 'not met.' If all targets have been met, at least one new action plan must be provided.	Section is fully populated but does not richly address so-what questions and does not provide context and elaboration regarding assessment results.